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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,096	08/09/2000	Hiroaki Sudo	JEL 31232	5375

7590 12/17/2003

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EXAMINER	
MOORE JR, MICHAEL J	
ART UNIT	**PAPER NUMBER**
2666	3

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/635,096	SUDO, HIROAKI	
	Examiner	Art Unit	
	Michael J Moore, Jr.	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *09 August 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-8* is/are rejected.

7)☒ Claim(s) *2 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1, 3 and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Blanchard et al. (U.S. 5,764,690). The Blanchard et al. reference discloses all of the limitations of the listed claims for the reasoning that follows.

Regarding claim **1**, the claimed limitation is an OFDM reception apparatus that comprises a FFT processor, a plurality of demodulators, and a selector. The FFT processor performs FFT processing on a reception signal while the plurality of demodulators are capable of performing mutually different demodulation techniques. A selector then allows a particular demodulator to perform the demodulation process based upon a quality factor.

The apparatus shown in Figure 1 of the Blanchard et al. reference anticipates an OFDM reception apparatus. An FFT processor is anticipated by element 124 of Figure 9 of the Blanchard et al. reference. A plurality of demodulators capable of performing mutually different demodulation techniques is anticipated by elements 22-1 to 22-N of Figure 1 as well as column 3, lines 10-24 of the Blanchard et al. reference. A selector for choosing a demodulator based upon a quality factor is anticipated by element 28 of Figure 1 as well as column 3, lines 38-56 of the Blanchard et al. reference.

Regarding claim **3**, the OFDM reception apparatus of claim **1** where either coherent detection processing or delay detection processing is used is anticipated by the coherent PSK demodulation spoken of in column 3, lines 20-24 of the Blanchard et al. reference.

Regarding claim **8**, the claimed limitation is an OFDM communication method that comprises a FFT processing step as well as a demodulating step that is carried out in accordance with a modulated signal quality factor.

The FFT processing step is anticipated by element 124 of Figure 9 as well as column 10, lines 66-67 and column 11, lines 1-5 of the Blanchard et al. reference. The demodulating step in accordance with a signal quality factor is anticipated by elements 22-1 to 22-N of Figure 1 as well as the "soft" decisions spoken of in column 3, lines 25-37 of the Blanchard et al. reference.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **4-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanchard et al. (U.S. 5,764,690) in view of Sayeed (U.S. 6,594,320).

Regarding claim **4**, the claimed limitation is an OFDM transmission apparatus comprising a modulator and an IFFT processor. The modulator performs modulation that corresponds to the demodulation performed by the OFDM reception apparatus

described in claim **1** above. The IFFT processor performs IFFT processing on the modulated transmission signal.

Blanchard et al. discloses an OFDM reception apparatus as claimed in claim **1**. Blanchard et al. does not disclose an OFDM transmission apparatus comprising a modulator and an IFFT processor. However, Sayeed discloses an OFDM transmitter in Figure 1 that contains modulators 110 and 130 as well as IFFT processor 150. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the OFDM reception apparatus claimed in claim **1** with a corresponding OFDM transmission apparatus. A motivation for doing so would be to provide a useful OFDM communication system that can effectively transmit and receive information as described in column 2, lines 26-57 of the Sayeed reference.

Regarding claim **5**, the claimed limitation is an OFDM communication apparatus equipped with both an OFDM reception apparatus as well as an OFDM transmission apparatus. The OFDM reception apparatus comprises a FFT processor, a plurality of demodulators, and a selector as described in claim **1** above. The OFDM transmission apparatus comprises a modulator and an IFFT processor as described in claim **4** above.

Blanchard et al. discloses an OFDM reception apparatus as claimed in claim **1**. Blanchard et al. does not disclose an OFDM transmission apparatus comprising a modulator and an IFFT processor. However, Sayeed discloses an OFDM transmitter in Figure 1 that contains modulators 110 and 130 as well as IFFT processor 150. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the OFDM reception apparatus claimed in claim **1**

with a corresponding OFDM transmission apparatus. A motivation for doing so would be to provide a useful OFDM communication system that can effectively transmit and receive information as described in column 2, lines 26-57 of the Sayeed reference.

Regarding claim **6**, the claimed limitation is a communication terminal apparatus equipped with an OFDM communication apparatus containing an OFDM reception apparatus as well as an OFDM transmission apparatus. The OFDM reception apparatus comprises a FFT processor, a plurality of demodulators, and a selector as described in claim **1** above. The OFDM transmission apparatus comprises a modulator and an IFFT processor as described in claim **4** above.

Blanchard et al. discloses an OFDM reception apparatus as claimed in claim **1**. Blanchard et al. does not disclose an OFDM transmission apparatus comprising a modulator and an IFFT processor. However, Sayeed discloses an OFDM transmitter in Figure 1 that contains modulators 110 and 130 as well as IFFT processor 150. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the OFDM reception apparatus claimed in claim **1** with a corresponding OFDM transmission apparatus. A motivation for doing so would be to provide a useful OFDM communication system that can effectively transmit and receive information as described in column 2, lines 26-57 of the Sayeed reference.

Regarding claim **7**, the claimed limitation is a base station apparatus equipped with an OFDM communication apparatus containing an OFDM reception apparatus as well as an OFDM transmission apparatus. The OFDM reception apparatus comprises a FFT processor, a plurality of demodulators, and a selector as described in claim **1**

above. The OFDM transmission apparatus comprises a modulator and an IFFT processor as described in claim **4** above.

Blanchard et al. discloses an OFDM reception apparatus as claimed in claim **1**. Blanchard et al. does not disclose an OFDM transmission apparatus comprising a modulator and an IFFT processor. However, Sayeed discloses an OFDM transmitter in Figure 1 that contains modulators 110 and 130 as well as IFFT processor 150. At the time of the invention, it would have been obvious to someone of ordinary skill in the art given these references to combine the OFDM reception apparatus claimed in claim **1** with a corresponding OFDM transmission apparatus. A motivation for doing so would be to provide a useful OFDM communication system that can effectively transmit and receive information as described in column 2, lines 26-57 of the Sayeed reference.

Allowable Subject Matter

5. Claims **2 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blanchard et al. (U.S. 5,862,132), Uesugi et al. (U.S. 6,259,721), Usui (U.S. 6,563,865), Ohkubo et al. (U.S. 5,959,965), Hamada et al. (U.S. 6,359,875), Jones et al. (U.S. 6,654,340), Sun (U.S. 6,295,311), and Uesugi (U.S. 6,038,264) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Moore, Jr. whose telephone number is (703) 305-8703. The examiner can normally be reached during the hours of 8:30am - 5:00pm (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached at (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Seema S. Rao
SEEMA S. RAO 12/11/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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